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(54) Title: METHOD AND SYSTEM FOR INTERACTIVE COLLECTION AND DISTRIBUTION OF INFORMATION RELATING TO PRODUCTS AND SERVICES

(57) Abstract:

METHOD AND SYSTEM FOR INTERACTIVE COLLECTION AND DISTRIBUTION OF INFORMATION RELATING TO PRODUCTS AND SERVICES

TECHNICAL FIELD

The present invention relates generally to managing customer interactions and for collecting, transferring and sharing information related to products and services, and more specifically to a unique method and system for interactive collection and distribution of information relating to products and services which determines a user's current stage of interaction for use in directing appropriate interaction and exchange dialog and selective offers of available items.

BACKGROUND OF THE INVENTION

The virtual explosion of technical advances in microelectronics, digital computers and software have changed and continue to change the face of modern society. In fact, these technological advances have become so important and pervasive that this explosion is sometimes referred to as "the information revolution." Through telephone lines, networks, satellite and other wireless communications and the like, information and resources are ever increasingly being accessed and shared.

The successful development and marketing of products, and especially consumer products, requires a deep understanding of consumers' needs and attitudes by the enterprise. Studying samples of the population of consumers, often called panels, focus groups or test markets, is a typical approach for collecting such information in the consumer area, for example. Collecting such data from a large number of individuals (rather than just a sample) will permit capturing rare insight and more individual differences.

Traditional approaches, such as a telephone or in-person interviews, can be very sophisticated through customization and adaptation by the human agent. However, they do not permit a large scale number of one-to-one interactions. Furthermore, well known devices such as paper (or electronic) questionnaires can be sent to large numbers of individuals, but they are limited to a rather rigid design, and provide no sense (or reality) of inter-personal relationship.

Today, the world wide web provides a venue for engaging vast numbers of individuals and information to be exchanged. In many cases, it has become just a fancy channel for implementing an old instrument, such as a survey questionnaire. Electronic mail is similarly increasingly used as a substitute for postal mail. Internet "chat" between two humans is fundamentally identical to the teletype machine of decades ago, although much more temporally akin to a live conversation. In addition, web pages often look like electronic versions of magazine pages offering typically a static, but sometimes a dynamic presentation of information. More progressive implementations heighten the engagement by providing interaction with multi-media. Some user interfaces include virtual characters (VCs) that provide a persona to the user.

With the growing advance of the "information revolution," there is a need to improve the quality, quantity and efficiencies of interactive systems for transferring information relating to products and services, ideas, needs, desires and preferences. The present invention provides a unique way to facilitate such transfer and interaction which build relationships between the consumer and the enterprise.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide novel methods and systems for interactive collection, exchange and distribution of information relating to products and services to consumers which overcome one or more disadvantages of the prior art. It is another object of the invention to provide novel methods and apparatus for providing an interactive system for transferring information relating to products or services. These and additional objects and advantages are provided by the methods and systems for interactive collection and distribution of information relating to products and services of the present invention.

It is another object of the present invention to provide a unique method and apparatus for gaining unprecedented access to insights and information relating to products and/or services which is based upon building an individual relationship with a user and allowing for essentially limitless variations of any particular relationship along parameters and conditions relating to areas of interest.

One aspect of the present invention is the interactive system for transferring information relating to products or services. In a preferred embodiment, the system comprises a user interface; a relationship director in communication with a personal data store and the user interface, wherein the relationship director comprises executable

instructions for determining a user's current stage in at least part from user information from the personal data store; and a reciprocity module in communication with the relationship director and comprising executable instructions for determining triggers for availability of related items for selective distribution to the user by the relationship director.

Another aspect of the present invention is the interactive system for transferring information unrelated to products or services. In a preferred application, the system comprises a user interface; a relationship director in communication with a personal data store and the user interface, wherein the relationship director comprises executable instructions for determining a user's current stage in at least part from user information from the personal data store; and an extraneous information module in communication with the relationship director and comprising executable instructions for determining triggers for availability of unrelated items for selective distribution to the user by the relationship director.

Yet another aspect of the present invention is the interactive system for transferring information relating to products or services comprising a user interface; a relationship director in communication with a personal data store and the user interface, wherein the relationship director comprises executable instructions for determining a user's current stage; a reciprocity module in communication with the relationship director and comprising executable instructions for determining triggers for availability of related items for selective distribution to the user by the relationship director; and an extraneous information module in communication with the relationship director and comprising executable instructions for determining triggers for availability of unrelated items for selective distribution to the user by the relationship director.

Another aspect of the present invention is the method for interactive collection and distribution of information relating to products and services. In a preferred application, the method comprises the steps of providing a user interface, a relationship director in communication with the personal data store and the user interface, wherein the relationship director comprises executable instructions for determining a user's current stage, and a reciprocity module in communication with the relationship director and comprising executable instructions for determining triggers for availability of related items for selective distribution to the user by the relationship director. The method further comprises interacting with the user using a dialog script. User input is recorded in the personal data store. The relationship director determines a user's current stage

corresponding to the user input and selects a further dialog script corresponding to the user's current stage. The relationship director will periodically offer to the user an available related item following trigger determination. The method is repeated until user termination.

Yet another aspect of the present invention is the method for interactive collection and distribution of information unrelated to products and services. In a preferred application, the method comprises the steps of providing a user interface, a relationship director in communication with a personal data store and the user interface, wherein the relationship director comprises executable instructions for determining a user's current stage, and an extraneous information module in communication with the relationship director and comprising executable instructions for determining triggers for availability of unrelated items for selective distribution to the user by the relationship director. The method further comprises interacting with the user using a dialog script. The user input is recorded in a personal data store, and the relationship director determines the user's current stage corresponding to the user input and selects a further dialog script corresponding to the current user stage. The relationship director periodically offers to the user an available unrelated item following trigger determination and repeats the method until user termination.

Another aspect of the present invention comprises a computer-readable medium. The computer-readable medium contains instructions for controlling a computer system to interact with a user for interactive collection and distribution of information. The instructions comprise the steps of: interacting with the user using a dialog script; recording user input in a personal data store; determining a user's current stage corresponding to the user input; selecting a further dialog script corresponding to the user's current stage; determining triggers for availability of items; periodically offering to the user an available item following trigger determination; and repeating until user termination.

Yet another aspect of the present invention is the network-based method for interactive collection and distribution of information. The method comprises the step of: providing a web site having a user interface; receiving at the user interface one or more items of user input from a user; recording the user input in a personal data store; determining a user's current stage from the user input; selecting a further dialog script corresponding to the user's current stage; periodically offering to the user an available item through the user interface; and repeating until user termination.

Still other objects, advantages and novel features of the present invention will become apparent to those skilled in the art from the following detailed description, which is simply, by way of illustration, various modes contemplated for carrying out the invention. As will be realized, the invention is capable of other different obvious aspects all without departing from the invention. Accordingly, the drawings and descriptions are illustrative in nature and not restrictive.

BRIEF DESCRIPTION OF THE DRAWINGS

While the specification concludes with claims particularly pointing out and distinctly claiming the present invention, it is believed that the same will be understood from the following description taken in conjunction with the accompanying drawings in which:

Fig. 1 is a schematic illustration of an interactive system for collection and distribution of information according to the present invention;

Fig. 2 is a schematic illustration of an exemplary decision tree for a relationship director of the interactive system of Fig. 1;

Fig. 3 is a schematic illustration of another embodiment of an interactive system for collection and distribution of information according to the present invention;

Fig. 4 is a schematic illustration of an exemplary dialog script of an interactive system for collection and distribution of information according to the present invention;

Fig. 5 depicts an illustration of an exemplary user interface comprising a virtual character of the present invention;

Fig. 6 depicts an illustration of another exemplary user interface comprising a virtual character of the present invention;

Fig. 7 depicts a flowchart of a method of interactive collection and distribution of information according to the present invention;

Fig. 8 is a schematic illustration of an exemplary client/server network embodiment of the present invention;

Fig. 9 depicts a flowchart of another embodiment of the method of interactive collection and distribution of information according to the present invention;

Fig. 10 depicts an exemplary interaction sequence which might be implemented with the interactive system of the present invention;

Fig. 11 depicts another exemplary interaction sequence which might be implemented with the interactive system of the present invention;

Fig. 12 depicts another exemplary interaction sequence which might be implemented with the interactive system of the present invention; and

Fig. 13 is a schematic illustration of an interactive system for collection and distribution of information according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Reference will now be made in detail to various embodiments of the invention, various examples of which are illustrated in the accompanying drawings, wherein like numerals indicate corresponding elements throughout the views.

One embodiment of the present invention is schematically illustrated in Fig. 1 which depicts an interactive system 1 for transferring information relating to products or services in accordance with one aspect of the present invention. The interactive system 1 is shown as preferably comprising a user interface 2, a relationship director 5, a personal data store 10 and a reciprocity module 8 as will be further described herein. The relationship director 5, for example, would likely preferably comprise a set of executable instructions such as in the form of software, routines, programs, algorithms, code and the like, which would, inter alia, determine a user's current relationship stage at any given time.

One of the important distinctive features of the present invention includes the focus on and the ability to establish and nurture a individual, cyber relationship with each particular user, with such relationship being personal to, unique and guided by interaction between that user and the system. Consequently, it is important that a user's stage be known at any given point of the ongoing interaction. The relationship stage is preferably related to the overall setup/purpose of the system (e.g. would relate in some way to relevant products and/or services, and typically would have a psychological basis related thereto). A user will be a person undertaking an interaction with a system (e.g. 1), or interface with the system as part of the method, of the present invention. The current stage of a particular user to be determined is simply an identifiable placement of that user within one of a plurality of possible "stages" provided in the system, as will be described, whereby the relationship director orchestrates ongoing interactions, makes decisions to offer available items to the user, and builds the relationship in an appropriate and natural manner.

The relationship director 5 is preferably provided in communication, such as via a token ring, Ethernet, telephone modem connection, radio or microwave connection,

parallel cables, serial cables, telephone lines, universal serial bus "USB", Firewire, Bluetooth, fiber optics, infrared "IR", radio frequency "RF" and the like, or combinations thereof, with the personal data store 10 and the user interface 2. The relationship director 5 may utilize, in at least part, user input from the personal data store 10 in determining the user's current stage. In one embodiment of the present invention, the user may be assigned a user name and password to identify the user to the relationship director of the interactive system. Other potential identification means include cookies, IP addresses, biometrics, user passcards, or other identification means known in the art.

The relationship director 5 compares the user input containing identification data with user input stored in the personal data store 10. If a match is found, the relationship director 5 will retrieve the user input and determine the current user stage. If no match is found, the relationship director 5 preferably sends a command to the personal data store 10 to create a new user input record in the personal data store 10. The relationship director 5 preferably sends any identifying data to the personal data store to be associated with the newly created record. Preferably, the relationship director 5 will create a "cookie" or similar type file and store the file on the user's computer to enhance the process of identifying the user.

User input can be any information obtained from a user, and might preferably comprise information, suggestions, preferences, ideas, attitudes, questions, answers, tone, actions, or lack thereof (e.g. results of interaction/participation). There can be a number of ways to determine the user's current stage. As an example, the user input might be matched against one or more decision trees. A decision tree typically is a set of responses/traits/categories against which the user input can be compared against. For example, a decision tree preferably comprises every combination of possible user input. The user input is then compared against the decision tree for a matching branch and the matching branch provides further instructions to be executed as a result of the match. Such decision trees would preferably comprise potential combinations of user input with the interactive system which have been designed with the system's intended application in mind, so that appropriate stages can be established that pertain to the desired exchange of information. Preferably, the decision trees are converted to mathematical algorithms which then process the decision tree comparisons or "decisions" electronically to ascertain the appropriate current stage to assign to the user at that time.

The decision trees for initial stages of our consumer products example are preferably based on focus group or survey research of users. A focus group typically comprises surveying a group of users about their attitudes and preferences with a proposed product or service to further refine and develop the proposed product and/or service. For example, the user may be assigned to various user stage sub-categories which correspond to personality traits, related information, extraneous information, demographic information, and the like. Personality traits may comprise attitudinal information about the user's personality and habits, such as being a "clean" person or having a "type A" personality. Related information comprises any and all information relating to the products and/or services of the enterprise. Extraneous information comprises any and all information unrelated to the products and/or services of the enterprise, such as entertainment, movie news, music news, soap opera reviews, chit-chat and the like. Demographic information sub-categories might contain special scripts for certain demographic areas, such as rural products and/or services, homeowners, households with a baby and/or pets, and the like. For example, a user may be assigned to "stage 3" for related information, "stage 6" for extraneous information, and "stage 2" for demographic information.

While examples are provided pertaining to consumer products such as detergents, soaps, and the like, it is contemplated that the present invention is equally applicable to other products and services which may have distinctive customers, users and concerns which might affect the applicable stages and/or a user's progression through stages. As used herein, the term "enterprise" is used to connote the person, company, business entity, cause or affiliation for which the inventive system and method is being employed. For example, in our embodiments relating to soap, detergents and consumer products, the enterprise might be a consumer products manufacturer or a consumer research company interested in such products.

The reciprocity module 8 is illustrated as being in communication with the relationship director 5. The reciprocity module 8 similarly preferably comprises executable instructions for determining triggers for the availability of related items for selective distribution to the user by the relationship director 5. As used herein, the term "item" comprises physical things such as products, prizes, coupons, or other rewards or things of some value, which can be actually given out, as well as non-physical things such as advice, compliments, entertainment, further conversation or other things which can be of value in establishing a relationship and/or showing appreciation. The term

'related items' is used to connote generally any and all items that have some determined relation, value or perceived connection to the products or services of the enterprise. Examples of related items include consumer demographics, cleaning preferences, cleaning tips, coupons, product samples, product related merchandise, that are reasonably related to the intended application of the system - such as in our example, consumer products. Preferably, the triggers in the system are any device or process that indicates the "availability" of an item for offering to a particular user corresponding to one or more decision trees and/or availability algorithms employed.

Typically, the reciprocity module determines if an item is available based on an availability algorithm. For example, in a preferred embodiment, when the user has met certain requirements of the decision tree, he/she may be offered a related item. In one embodiment of the present invention, for example, the selective distribution comprises the computer assigning a percentage of probability, such as 70% (i.e., any percentage between 0 and 100%), and utilizing a random number generator to determine whether to actually distribute or offer the related item to the user. For example, the relationship director will send an instruction command to the CPU to generate a random number between 0 and 100%. If the resulting number returned to the relationship director from the CPU is above 70%, the item will not be offered to the user at this time. If the number returned to the relationship director is 70% or lower, then the relationship director will offer the item to the user.

An example of a decision tree for how the relationship director 5 might interact with the reciprocity module 8 is shown in Fig. 2. Fig. 2 depicts four exemplary potential current stages (stage-0 through stage-3) which the user can be classified in at any given time. As will be understood, for each relationship stage, there will most preferably be designed a set of one or more items that will be selectively offered to the user, a set of desired information (including input, preferences, suggestions or attitudes) to be obtained from the user, a set of conditions (e.g. item and information exchanges and timing) which help determine stage progress or status, and an agenda for interactions (e.g. dialog scripts and the like) with the user. Accordingly, the decision tree has certain requirements that must be met before the user is assigned a higher stage.

For example, a new (first time) user initially interacting with the interactive system will be assigned stage-0. In the decision tree of Fig. 3, the user, through the interactive system's dialog scripts 12, would be required to provide his/her name and some basic information such as age, sex, zip code and possibly other similar basic data. Preferably,

requirements or criteria for progressing to further stages are transparent to the user, and the user is not made aware of the requirements to move to the next stage. Only upon completion of the requirements (e.g. answering of questions, providing required actions, etc.) will a user be eligible for progressing to another stage. In one embodiment of the present invention, a randomness factor is utilized in the decision of moving to a different stage.

Preferably, the relationship director 5 can be configured with a probability percentage assigned to each stage level. For example, a user could have completed the requirements for moving to stage-1, but the relationship director 5 will still utilize a random number generator to determine whether to actually move the user to the next stage. This feature helps to keep all relationships in the system unique and somewhat unpredictable, which has been found to actually better parrot natural relationships and add to the overall experience of the system interaction for the users. The relationship director might comprise instructions to avoid "disconnects" during interactions and in the overall relationship being built. For example, in addition to insuring that responses accurately correspond to user questions and input, the relationship director may track the user's progression through the current stage and possibly even decide to move the user to a lower stage based on the progress (or regression) of the interaction. The relationship director preferably analyzes not only the user's responses, but the tone of the response and the timing of the response. For example, the relationship director may comprise a language analyzer to analyze user input for attitudinal and personality traits. The relationship director may attempt to better mimic a natural relationship by incorporating attitudinal psychology elements into the algorithms to further develop the one to one relationship. For example, a language analyzer may determine if the user has a dominant personality and does not prefer chit-chat. The relationship director may minimize the amount of chit-chat that is directed to the particular user.

In one embodiment of the present invention, the relationship director is in communication with an extraneous information module 16 as depicted in Fig. 3. The extraneous information module 16 preferably comprises executable instructions for determining triggers for the availability of unrelated or extraneous items for selective distribution to the user by the relationship director. As used herein, the term "unrelated item" comprises physical things such as products, prizes, coupons, or other rewards or things of value, which can actually be given out, as well as non-physical things such as advice, compliments, social chat, entertainment, further conversation or other things

which can be of value in establishing a relationship and/or showing appreciation. Preferably, the extraneous information module 16 determines triggers for the availability of unrelated stimuli. As user herein, the term "stimuli" comprises entertainment, games, discussions, unrelated web sites and unrelated items. The term 'unrelated items' is used to connote generally any and all items that have little or no determined relation, value or perceived connection to the products or services of the enterprise. Examples of unrelated items include games, music, videos, tickets to events/movies, links to other websites, and clothing. Preferably, the triggers in the system are any device or process that indicate the "availability" of an unrelated item for offering to a particular user corresponding to one or more decision trees and/or availability algorithms employed.

Typically, the extraneous information module determines if an unrelated item is available based on an availability algorithm. For example, in a preferred embodiment, when the user has met certain requirements of the decision tree, he/she may be offered an unrelated item. In one embodiment of the present invention, for example, the selective distribution comprises assigning a percentage of probability, such as 70%, and utilizing a random number generator to determine whether to actually distribute or offer the unrelated item to the user. For example, the relationship director will select 70% of numbers from 1 to 255, preferably the relationship director selects 1-180 as corresponding to 70% of the number range. The relationship director then sends an executable instruction to the CPU to select a random number between 1 and 255. If the number selected by the CPU matches one of the numbers selected by the relationship director such as 75, the unrelated item may be offered to the user. However, if the CPU selects a number that the relationship director did not select such as 200, the relationship director will not offer the item to the user at this time. Preferably, the relationship director at a later point in the interaction will repeat the random probability process to determine if the item will be offered to the user.

In another embodiment of the present invention, the relationship director 5 is part of a more general or encompassing management system 18, as depicted in Fig. 3. In such an application, the management system 18 comprises executable instructions for supervising and directing the flow of information between and among the relationship director 5, user interface 2, and other elements of the interactive system 1. For example, management system 18 might comprise a set of executable instructions such as software, routines, programs, algorithms, code and the like, which would, inter alia, direct the flow of information to the relationship director, user interface and other elements of

the interactive system such as a web server in a world wide web embodiment of the present invention.

In another embodiment, an administrative user, preferably through the administrative interface 23, can selectively configure the probability levels in the relationship director's 5 decision trees. This ability allows the administrative user to make real-time changes to the relationship director. In this way, added unpredictability, correction of "bugs", updating/upgrading the relationship director's functionality, and/or additional stages or stage requirements can be implemented as desired and, preferably, in a seamless and non-intrusive manner to the system. An exemplary demonstration of this embodiment is presented in Example III.

In another embodiment of the present invention, the method further comprises accessing the personal data store for information of ongoing product development. For example, the personal data store might contain survey results from users with respect to difficulties they have experienced with current cleaning problems in which no known cleaning product or process is effective. An administrative user may access the personal data store and utilize the user input to develop or improve products and services of the enterprise to satisfy the user's requirements. This insight gained from the user may provide very beneficial information for product development and improvement of products and services of the enterprise. It can be contemplated as well, that an enterprise might make its interactive data base results, analysis of the data, available to other entities. This might entail allowing such entities to have access to such data via the Internet, via printed reports, via interactive software on computers, periodic data subscription services or the like.

In yet another embodiment of the present invention, the interactive system further comprises a technical information director 20. The relationship director 5 may send user input comprising a request for information about a product or service of the enterprise. Technical information is contemplated herein as comprising any information regarding or beneficial to the products and services of the enterprise. Products and services of the enterprise could include past, present and future products and services of the enterprise. Preferably, the technical information director 20 is in communication with one or more technical data stores 21 which comprise technical information regarding products and services of the enterprise. For example, the technical data store 21 may comprise a database about cleaning tips including cleaning information from various sources such as Rodale Press. The technical information director, for example, would likely preferably

comprise a set of executable instructions such as software, routines, programs, algorithms, code and the like, which would, inter alia, search the technical data store or other sources such as the Internet for information in response to a question from a user regarding a product or service of the enterprise. The technical director would then compile appropriate response information and forward those results to the relationship director for use in further interaction with the user.

In order to provide a continuing natural relationship with the user, one embodiment of the present invention comprises the decision trees or algorithms of the relationship director 5 being updated by a neural network. The neural net 25 assesses user input in the personal data store to determine if any changes to the mathematical algorithms or dialog scripts are needed to facilitate or optimize the interaction with the user. For example, a neural network can continuously update its decision making algorithm by incorporating user input such as feedback, frequency of visits, number of visits and length of visits into the decision making process. According to Haykin, S. (1994), *Neural Networks: A Comprehensive Foundation,* NY: Macmillan, p. 2, a neural network is a massively parallel distributed processor that has a natural propensity for storing experiential knowledge and making it available for use. It resembles the brain in two respects: 1) Knowledge is acquired by the network through a learning process; and 2) Interneuron connection strengths known as synaptic weights are used to store the knowledge. The neural network analyzes the personal data store 12 for trends, feedback data, demographic data and other additional data to develop and refine algorithms for decision making. In a preferred embodiment, a neural network would automatically make changes to the relationship director's 5 decision trees or algorithms based upon the growing base of user input and interaction data. For example, the neural network may change the amount of initial "chit-chat" or marginally related discussion for a certain current stage, if the user input indicates a lessened desire to chit-chat with the interactive system. Similarly, in one embodiment of the present invention, the relationship director may comprise genetic algorithms. A genetic algorithm preferably modifies its parameters based on performance feedback. The method is metaphorically similar to genetic natural selection. The relationship director could contain one or more genetic algorithms as the interactive system permits a large number of experiences in an automated environment.

As shown in Fig. 2 and as described above, the reciprocity module 8 preferably brings into play its own algorithms for selectively triggering the availability of different

items corresponding to each user stage. For example, in the decision tree of Fig. 2, at stage-0, a user is only offered items of chit-chat, problem-solving and tips. Whereas under stage-3, a user is offered chit-chat, problem-solving, tips, coupons, emailed tips, various premiums, samples and other bonuses. As mentioned, once the reciprocity module triggers the availability of an item, the relationship director will generally have ultimate discretion as to if and when that item will be offered to the user. Often, the relationship director will automatically pass on the offer to the user immediately upon trigger, although delaying or withholding the offer may result where the relationship director sees an opportunity to expand the relationship in other ways (e.g. extended conversation, quizzing or listening to the user) or where a random generator blocks the offer.

In a consumer products application, the user interface 2 might preferably comprise a kiosk, a computer, a personal digital assistant (PDA), a device with wireless application programs (WAP) such as cell phone, auto computer or PDA, interactive TV, or an Internet appliance, or the like. User interface 2 allows the user to communicate and interact with the interactive system 1 and, as will be understood, can take any of a virtually unlimited number of alternative forms. In a preferred embodiment, the user interface 2 may comprise a computer system comprising a CPU, memory, a visual display device and an input means. Preferred input means comprise a keyboard or mouse or other means of input such as speech recognition and/or visual input utilizing a video camera. In a preferred embodiment, the user interface 2 comprises a computer connected to the Internet through a communication link and running a web browser such as Internet Explorer from Microsoft Corp. or Netscape Navigator from Netscape Communications Corp. Preferably, the user interface 2 further comprises one or more virtual characters. A virtual character comprises a static or dynamic image, figure or animation which preferably presents a recognizable persona. For example, the virtual character may be an image of a professor for educational information, a chef for cooking information, or Mr. Clean® cleaning icon for household cleaning information.

In another embodiment of the present invention, the relationship director 5 is provided with access to one or more pre-determined dialog scripts or protocols 12 for directing user interaction. The dialog scripts 12 comprise the language resource for interacting with a user. Preferably, through its executable instructions the relationship director 5 determines the user's current stage as described above and selects corresponding dialog scripts 12 to interact with the user. The dialog scripts 12 may

comprise humor, chit-chat, problem-solving help, surveys, and the like. Preferably, the dialog scripts 12 are stored in a database. In a preferred embodiment, the dialog scripts 12 can be edited and maintained by a remote administrative user. The administrative user may connect directly to the dialog script database 12 or access the dialog script database 12 through the management system 18 and the administrative user interface 23. Preferably, the dialog scripts 12 further comprise extraneous information such as entertainment, social conversation, music, games, travel information and other unrelated stimuli.

As shown in the example of Fig. 4, the dialog script may comprise related items, humor and unrelated items. Preferably, the related items dialog scripts 43 are categorized by user stages 44, which can be further broken down into steps (46) of interactions. In one embodiment, the unrelated item dialog scripts might be categorized by user stages, and the user stage for unrelated items for a particular user may differ from the user stage for related items for the same user. As described above for example, a user may be assigned user stage 3 for related items and user stage 4 for unrelated items. In addition, the unrelated items dialog scripts may comprise universal scripts that can be utilized by the relationship director regardless of the user's current stage.

Preferably, the relationship director 5 can chose any step 46 and the interaction is not required to progress in a sequential order through the steps 46. A decision tree might be utilized by the relationship director to chose the step of the dialog scripts to further the interaction. For example, the user input may correspond to the dialog of "step 23" even though the prior step was "step 2". The relationship director 5 can select the dialog script for "step 23" and further interact with the user. For example, as depicted in Fig. 4, "step 11" of stage-0 of the related items 43 may be presented to the user after an interaction about products or services of the enterprise. The script comprises asking the user if he/she would like to be sent a coupon 47. If they respond yes, the relationship director 5 checks to determine if the user's address is contained in the personal data store 10. The relationship director 5 preferably interacts with the user by informing the user that it is searching the records to see if the user's address is contained therein. It should be understood that in faster systems, the user might simply be informed as to the address in the system and asked to verify that information for mailing the item. If the user's address is contained in the personal data store 10, the relationship director 5 would then select the dialog script under "Yes". If the relationship director 5 determines

that the user's address is unknown, the relationship director 5 will select the "No" dialog script and ask the user for his/her mailing address. This user input is then stored in the personal data store 10. At that point, the relationship director 5 would send a communication to the administrative user interface 23 to send the user the selected coupon, and the relationship director might make a note in the user data store to ask about that coupon in the future.

In one embodiment of the present invention, the personal data store 10 comprises a relational database system or a distributed directory such as Novell Directory Services (NDS). Preferably, utilizing presently available technology, the dialogue script database 12 comprises a distributed directory. A relational database management system (RDBMS) is a computer database management system that uses relational techniques for storing and retrieving data. The relational techniques preferably comprises providing common fields, such as user name, length of interaction, date of interaction, etc., for each entry in the database. These common fields allow comparison between different users of the interactive system. A relational system has the flexibility to take any two or more files and generate a new file from the records that meet the matching criteria. For example, an administrative user may desire a list of all users that have reached "stage 3" and have interacted with the system in the last 60 days. A relational system allows this list to be easily created from the main relational database. Relational databases are computerized information storage and retrieval systems in which data in the form of tables are typically stored for use on disk drives or similar mass data stores. A "table" includes a set of rows spanning several columns. Each column in a table includes "restrictions" on the data contents thereof and may be designated as a primary or foreign key.

In another embodiment of the present invention, the interactive system 1 comprises executable instructions for selectively providing one or more virtual characters through the user interface. As mentioned earlier, the virtual characters can comprise one or more static or dynamic images. Preferably, a virtual character would include speech capabilities, which might be generated utilizing Microsoft Agent from Microsoft Corp. or another similar virtual character program known or accessible in the art. Similar programs known in the art include Live Comics from Extempo, Inc., Flash from Macromedia, and the like. Typically, the virtual character comprises one or more animations which interact with the user through the user interface 2. The interaction is directed by the relationship director 5. Preferably, the virtual character comprises at

least part of an identifiable body to interact with the user, and which can help to develop the relationship by literally putting a face (and preferably a body) to the system, and making the interaction experience more personal and natural. The virtual characters would preferably also be provided with additional effective elements (such as appropriate flattery, interest and user style matching) to enrich the interpersonal experience of the user and promote cooperation, relationship development, and progression through stages of the plan. The virtual characters may include family and friends of the virtual character. For example, the Mr. Clean® virtual character may invite the Pampers® guy to talk about diapers. The virtual character may be visually seen or unseen, and preferably can be in multiple dimensions, such as 3D and 2D, depending on the user interface and the application. An example of a user interface comprising a virtual character is depicted in Figs. 5 and 6.

In one embodiment, the VC would comprise a body element (which might typically take the form of a cartoon character, or life-like figure), a voice element (which is typically generated from an authored text dialog or script), and a brain element (which analyzes and determines what actions to take next). For the body element, various technologies presently available or further developed could be utilized. For example, the Live Comics? application can provide static two-dimensional cartoon like renditions of characters or figures, while the Microsoft Agent application can provide animated near 3-dimensional animations for more life-like characters and figures. Implementation of such technologies for the creation of the body element of a VC generally begins with art work such as drawings, photographs or sculpture.

For the voice element of the VC, applications such as the True Voice text to speech engine of the Lernout & Hauspie may be utilized. The True Voice application or tool generally comes integrated with the Microsoft Agent application, and is utilized to implement the authored text dialog as desired. As will be understood, it may be desired that the VC may not actually speak, but that text dialog might be added in static form or as a moving banner on the computer screen. It is also contemplated that text databases or "knowledge basis" might be utilized to match a free-form query with an appropriate response in some applications. Several such search technologies are available such as the Inquizit, Verity, and Oracle context option search engines.

Similarly, for the brain element of the VC, the Imp Character Editor is available from Extempo, Inc. can be utilized. In this respect, confidence in the character authoring of the Extempo system Imp Character Editor would be required, and the Web Guide

Application framework provided by Extempo would be employed. In such a scenario, "Web Stops," which are presented in the Extempo tool kit as templates for a VC providing information on content at various web pages, would be used to model the engineering relationships required for this aspect of the VC. For example, a web stop would be created for each relationship stage beyond stage 0 in the examples set forth herein, naming each web stop Relation 1, Relation 2, etc. A web stop named "Dispatch" might also be preferably created, along with another web stop named "Standby." Preconditions for each of the web stops would be defined, specifying the logical conditions under which items would become offerable to a user, as further discussed herein. For example, "Item Premium-2 offerable" might be defined by the logical condition "Item Premium-2 is NOT already accepted, AND relationship stage is beyond stage-2." In an Extempo Imp Character Editor, such a definition would be coded as follows:

```
$Int=&&($Int=($String=UserAttribute(gift.premium2")!=$String="
accepted"), $Int=($Int=UserAttribute("RelationshipStage")>2)))
```

Preconditions for each of the web stops would be defined by specifying the logical conditions under which the VC can attempt to progress the relationship from one given stage to the next. For example, "try relationship2" might be defined by the logical condition "user is at stage 1 AND has made 3 or more visits to the site." In the Extempo Imp Character Editor, such a definition would be coded as follows:

```
$Int=$$($Int=NLGPrecondition("Relationship1"),
$Int=NLGPrecondition("visit3plus"))
```

The "Dispatch" WebStop will preferably provide a control point for the relationship agenda management of the system. Most authored dialog sequences should end with a "GoToStop" directive, specifying "Dispatch." Within the "Dispatch" WebStop in the WebGuide itinerary, the following agenda might preferably be employed:

1. Author a Step with a null dialog (i.e., nothing is said, but a branch point is created in the software) and a GoToStop "Standby," conditioned by the precondition that is set to "true" if the relationship management should be suspended. For example, if the user is in a hurry to get their question answered and does not desire any perceived

superfluous discussion or activity, implementing a working relationship agenda could be counterproductive to building the relationship and to a positive experience for the user.

2. Author additional Steps with dialog sequences for each item which might be offered to the user, conditioning each such Step with an appropriate corresponding precondition.

3. Author additional Steps with any stage-independent dialog which may be appropriate to the interaction (i.e., these are steps that can be used in any of the stages for given predetermined interactions).

4. Author a Step with a null dialog (i.e., nothing is said, but a branch point is created) and a GoToStop "Relation-n" for each value of n desired for the system, conditioning each such Step with a corresponding appropriate precondition (i.e., whether that stage can be attempted at a given point in time).

The "Relation-n" WebStops are preferably created to provide the context for authoring further dialogs which are exclusive to a specific relationship stage and/or which lead the user to fulfill conditions for advancing to the next stage. For example, the Relation-n WebStop "Relation3" might contain two steps. First, there might be provided a friendly and flattering dialog, followed by a second step including a request for the user to participate in a chat session. If the user accepts the request, then the user has fulfilled one of the requirements for that particular relationship stage and for moving to the next higher relationship stage. Of course, there may be any number of other requirements, such as additional actions which must be accomplished, items which must be accepted by the user, and/or a prerequisite number of visits to the site by that particular user.

Finally, the "Standby" WebStop preferably provides a control point for the VC to suspend the relationship management agenda. Such a WebStop would include a dialog that states that the VC is ready for the user's next request.

Another key feature of the present invention is its overall method for interactive collection and distribution of information as depicted in the flowchart of Fig. 7. The method comprises the steps of: providing the interactive system to a user (shown as step 50), which comprises a user interface 2, a relationship director 5 in communication with a personal data store 10 and the user interface 2, and a reciprocity module 8 in communication with the relationship director 5, as discussed above. The method further comprises interacting with the user through a dialog script (52), based upon the user's previously determined stage. As discussed, the relationship director 5 controls the

interaction through appropriate dialog scripts, and records user input (step 54) from the user in the personal data store 12. The relationship director 5 then determines a user's current stage from the user input in the personal data store 12 (step 56). Once the user's current stage has been determined, the relationship director 5 selects a further dialog script 12 to continue the interaction with the user (step 58).

The relationship director 5 periodically and selectively offers items to the user following trigger determination (step 60) by the reciprocity module. The method is repeated until user termination (step 62), which can be induced in a number of ways, including user sign off, communication interruption, user failure to respond, or other completion of the interaction. In one embodiment, the items comprise related items as defined above. In another embodiment, the items comprise unrelated items as defined above. In a preferred embodiment, there might be a mixture of both related and unrelated items utilized from time to time by the system.

Often computers telecommunicate with each other and share information, applications and/or services. Sometimes in this setting, the various computers are referred to as nodes, which is a generic term referring to an access point in a interconnected system. One type of computer network employs a client/server architecture, wherein the portions of network applications that interact with human users are typically separated from the portions of network applications that process requests and information. Often, the portions of an application that interact with users or access network resources are called client applications or client software, and portions of an application that process requests and information are called server applications or server software. Client machines tend to run client software and server machines tend to run server software, however a server can be a "client" as well. In a preferred embodiment of the invention, the user interface would be typically provided on a client machine (which might be any of the user interface alternatives contemplated and exemplified above such as a network computer, stand alone computer, interactive kiosk, etc.) and the software containing the computer instructions which comprise the methods according to the present invention would be located on a server computer, separate from the client machine.

Fig. 8 schematically illustrates a sample client/server network 35 which might be employed to implement an embodiment of the present invention. As one with ordinary skill in the art will readily appreciate, a client/server network is only one type of network, and a variety of other configurations, such as peer-to-peer connections, are also

considered networks. In a client/server network, a plurality of nodes are interconnected such that the various nodes send and/or receive information to/from one another. As shown here, a server node (38) is interconnected with a plurality of client nodes (40) using a connection (39) such as a token ring, Ethernet, telephone modem connection, radio or microwave connection, parallel cables, serial cables, telephone lines, universal serial bus "USB", Firewire, Bluetooth, fiber optics, infrared "IR", radio frequency "RF", and the like, or combinations thereof.

A computer-readable medium, shown here as a CD ROM (22), holds information readable by a computer, such as programs, data, files, etc. As will be readily appreciated, computer-readable medium can take a variety of forms, including magnetic storage (such as hard disk drives, floppy diskettes, etc.), optical storage (such as laser discs, compact discs, DVD's, etc.), electronic storage (such as random access memory "RAM", read only memory "ROM", programmable read only memory "PROM", etc.), and the like.

Yet another embodiment of the present interactive method depicted in Fig. 9 comprises a network-based arrangement for interactive collection and distribution of information. The method comprises the steps of: providing a web site having a user interface (step 65); receiving at the user interface 2 one or more items of user input from a user (step 67); recording the user input in a personal data store 10 (step 54); determining a user's current stage from the user input (step 56); selecting a further dialog script 12 corresponding to the user's current stage (step 58); periodically offering to the user an available item through the user interface 2 (step 60); and repeating until user termination (step 62). This embodiment is particularly preferred for utilizing the interactive system on a web site on the Internet or the like.

Preferably, the web site is hosted on a network such as a wide-area network, local-area network, or the Internet, and the like. The Internet and World Wide Web operate on a client/server model and the user runs a web client, or browser, on a electronic device such as a computer, PDA, cell phone or television tuner, and the like. The web browser contacts a web server and requests data information, in the form of a Uniform Resource Locator (URL). This data information comprises the user interface of the interactive system of the present invention. Typically, URL addresses are typed into the browser to access web pages, and URL addresses are embedded within the pages themselves to provide the hypertext links to other pages. A hypertext link allows the user to click on the link and be redirected to the corresponding web site to the URL address of

the hypertext link. Many browsers exist for accessing the World Wide Web, such as Netscape Navigator from Netscape Communications Corp. and the Internet Explorer from Microsoft Corp. Similarly, numerous web servers exist for providing content to the World Wide Web, such as Apache from the Apache Group, Internet Information Server from Microsoft Corp., Lotus Domino Go Webserver from IBM, Netscape Enterprise Server from Netscape Communications Corp. and Oracle Web Application Server from Oracle Corp. These browsers and web servers can be utilized to allow access to the present invention from virtually any web-accessible device.

An exemplary network system is depicted in Fig. 13. The network system 74 comprises a server 81, such as a Dell® PowerEdge? 8450. The PowerEdge? 8450 preferably comprises up to eight Intel® Pentium® III Xeon?processors and up to 16GB of ECC memory capacity. The server is in communication with the personal data store 10, which preferably is a relational database such as the Oracle® 8i database. As shown in Fig. 13, the personal data store 10 is connected to the server through a connection node 39 on a network. One in the art will appreciate that the server 81 can comprise the personal data store 10. Alternatively, the personal data store 10 could be located anywhere in the world that is in communication with the Internet 78. The Internet 78 is comprised of numerous webs of connections that cover the entire world allowing a user to interact with the interactive system through a computer 84 anywhere in the world, as long as the computer is connected to the Internet. The home computer 84 preferably is a Dell® Dimension XPS T750r computer system with an ADSL or cable modem connection to the Internet 78. Alternatively, the home computer 84 may comprise a modem for a dial-up connection to a local Internet service provider which is connected to the Internet 78. The interactive system 74 further comprises an administrative computer 88 which allows an administrative user access to the personal data store 10 and the relationship director 5 located at the server 81. The administrative computer 88 preferably is a Dell® Dimension XPS T750r computer system with an network interface card connected to an ethernet network 39 which comprises a connection to the Internet 78. This embodiment allows an administrative user to access the user data and relationship director 5 from any location in the world.

In one embodiment of the present invention, a virtual character interacts with the user through the web browser. User input is received through a proprietary access line via the web browser and is transmitted to the web server. Preferably, the web server then passes the user input directly to the relationship director 5. As described herein,

the relationship director 5 preferably comprises an application which provides one or more basic cognitive functions for a virtual character, such as natural language conversion, real-time selection of actions, gestures and expressions, social skills, and affect. In this regard, the relationship director 5 might comprises the Imp Engine from Extempo, Inc. or other similar programs known in the art. Like the scripts, actions, gestures, expressions and the like might preferably be built into the virtual character's persona, and may also be governed to some extent by the relationship stage of the user. The relationship director 5 records the user input in a data store 10 and determines the user's stage and selects a corresponding dialog script 12. The relationship director 5, preferably also periodically sends an instruction command to the reciprocity module 8 to determine if an item is available for distribution. In the embodiments illustrated, the reciprocity module 8 analyzes the user input through one or more decision trees to determine if an item can be offered. If the reciprocity module 8 determines that an item can be offered to the user (i.e. item availability is "triggered"), the reciprocity module 8 sends an instruction command to the relationship director 5 indicating an item is available for distribution. The relationship director 5, in its discretion, could then select a corresponding dialog script 12 for the item to be offered, and offer the item to the user. As mentioned, the relationship director 5 may also preferably comprises a randomness component, in which a random number generator and a pre-defined probability percentage are used to determine whether and when to offer the item to the user for distribution.

EXAMPLES

The following examples depict three typical scenarios of users.interacting with the interactive system of the present invention. Fig. 10 depicts an exemplary interaction by a fictional user "Pat". Fig. 11 depicts an exemplary interaction by a fictional user "Bill". Fig. 12 depicts an exemplary interaction by an administrative user "Mike". The interactions depicted in Fig. 10 and Fig. 11 preferably take place over several "visits" to a web site of the exemplary interactive system relating to consumer products.

EXAMPLE ONE

As depicted in Fig. 10, the relationship director 5 ("Relationship Agent") begins the interaction by welcoming the user to the interactive system. The interactive system is running on a standard computer web server. The web server is connected to the

Internet. Pat is using an ordinary home computer comprising a CPU and memory. The web server sends all user interaction to the relationship director. The relationship director comprises software running on the web server computer or in communication with the web server computer. Pat connects to the Internet through her Internet Service Provider and opens Internet Explorer web browser software on her computer. Pat enters the URL (address) of http://www.mrclean.com. The web browser sends the URL request to the web server computer through the Internet. The web server computer sends a command instruction back to Pat's computer to check for the presence of a cookie corresponding to the interactive system. Finding no cookie, the web server sends a command to the relationship director identifying Pat as a new unknown first time user. The relationship director determines that Pat is at relationship stage 0 and selects the corresponding introduction dialog script.

The relationship director next sends the dialog script to the web server which incorporates the script into the web page and then the web server sends the web page to Pat through her web browser. Pat acknowledges the welcome and then proceeds to ask "how can I get ink stains off my tablecloth?". The relationship director 5 analyzes the user input and determines the user input as a request for technical information. Accordingly, the relationship director 5 transmits the request to the technical information director 20. The technical information director 20 searches one or more data stores for information regarding ink stain removal from cloth, and transmits the search results, which may comprise one or more answers, to the relationship director 5. The relationship director 5 then transmits the results to the web server which sends the results to Pat's computer.

The relationship director then inquires how useful the search results were. If Pat gives a low rating, the relationship director 5 will offer to have someone call or E-mail Pat for further help. If Pat gives a high rating, the relationship director will preferably send a command to the technical information director noting that the search results were particularly effective. The technical information director may utilize this feedback data in developing future search schema. The relationship director 5 may then ask Pat for her first name. If Pat responds by entering her first name, the user input is saved to the personal data store 10.

Interactions thereafter will be tailored to include the user name of "Pat" in the dialog. The relationship director 5 then may request further information about Pat. The algorithms of the relationship director and a random probability generator determine

whether to request further information from Pat. The further information may comprise purchasing trends, personal data such as income, marriage status, favorite products and the like. If Pat agrees to provide further information, the relationship director 5 will apply dialog scripts 12 which request basic demographic information from the user. Once this demographic information is obtained from Pat, it is stored in the personal data store 10. In this example, the relationship director 5 then determines that the relationship with Pat has progressed to the next stage (moving from first time user or stage 0 to relationship stage 1). The relationship director 5 then requests the reciprocity module 8 to determine if any related items are offerable to Pat.

In this example, the reciprocity module 8 determines that a generic coupon is offerable at this time to Pat and passes an instruction command to the relationship director 5. The reciprocity manager may determine to offer a specific coupon, such as 75 cents of the normal size of a Mr. Clean® cleaning product, or a generic coupon which allows the relationship director to determine which product or service the coupon should relate to. The relationship director 5 selects a corresponding dialog script 12 for offering the coupon to Pat. The dialog script 12 may comprise "Would you like a coupon?". The relationship director 5 then waits for the user input from Pat. In the example of Fig. 10, Pat responds that she would like a coupon. The relationship director 5 records the user input and determines whether the required personal data (such as mailing address) is contained in the data store 10 for Pat. If the required personal data is not in the personal data store 10, the relationship director 5 will select a dialog script 12 to obtain the personal data. The dialog script 12 may comprise " Please give me your home address so I can mail the coupon". The required personal data is then obtained from Pat and saved in the personal data store 10.

After all the required personal data has been obtained, the relationship director 5 notifies an administrative user to send a coupon to Pat. The relationship director 5 then asks Pat to complete a survey. If Pat agrees to take the survey, the relationship director 5 determines from the personal data store 10 which surveys Pat has yet to complete. The relationship director 5 then selects a corresponding dialog script 12 containing an appropriate survey and presents the survey to Pat. Each answer to the survey is recorded in the personal data store 10. When the survey is complete, in this example, the relationship director 5 determines that Pat has progressed to stage two. The relationship director 5 passes a command instruction to the reciprocity module 8 to determine if any items are available at stage two for Pat, and the reciprocity module 8

determines which past items have been offered and which items have been accepted by Pat from the personal data store 10.

In this example, the reciprocity module 8 determines that Pat can be offered a free sample of a related product and passes a command instruction to the relationship director 5. The relationship director 5 determines whether and when to present the item offer to Pat. In this particular example, Pat then asks an unprompted question regarding another product. The relationship director 5 analyzes the request preferably using key words and determines that the technical information director 20 could best answer Pat's question about the product. After the search results are provided by the technical information director and presented to Pat, the relationship director 5 asks if Pat would like a free sample of the product which was the subject of the question. If Pat accepts, the relationship director 5 checks the personal data store 10 to determine if the required address information is present. Since the required information was previously gathered during the coupon offer, the relationship director selects a dialog script 12 which confirms Pat's mailing address. Any corrections to the address are saved in the personal data store 10. Pat then indicates that she must go to a meeting and signs off the web site.

All of the data from Pat's interaction is now available in the data store for use in the system. That further use includes availability for access by researchers and the to prepare consumer input reports, to compare with other data, to be sold to third party users, or for other applications for which consumer input may be valuable.

EXAMPLE TWO

The example depicted in Fig. 11 begins in a similar manner to Example One. The user's name in this example, however, is Bill. The relationship director welcomes Bill and Bill proceeds to ask the same cleaning question regarding ink stains on cloth as in Example One. The relationship director 5 passes the command to the technical information director 20 similar to in Example One. The relationship director might compare the user input in the personal data store to determine if Bill had previously asked the same question before. The relationship director 5 later asks for the user's name. Bill inputs his name and the relationship director 5 saves the user input in the personal data store 10. The relationship director 5 then asks Bill if he would like to give some basic demographic data. Bill responds that he would not like to provide the demographic data at the current time. The relationship director 5 records the refusal to provide demographic data in the personal data store 10. Bill then asks another cleaning

question. The relationship director 5 determines Bill's request is for technical information and passes the request to the technical information director 20. Bill then terminates his interaction with the system. At a later date, Bill revisits the interactive system on the web site. The relationship director 5 obtains user input data to identify Bill (such as user ID, password, cookie information, or the like) and determines his current user stage from the personal data store 10. The relationship director 5 welcomes Bill back to the site. Since the personal data store 10 contains Bill's name, the relationship director 5 tailors the dialog scripts 12 to include his name where appropriate. The relationship director 5 may then ask Bill for some basic demographic data. If Bill responds positively, the relationship director 5 proceeds to obtain the demographic data as described in Example One. After obtaining the demographic data, the relationship director 5 determines that Bill has progressed to the next relationship stage, stage 1. The relationship director 5 then passes a command instruction to the extraneous information module 16 to determine which items (if any) are available to be offered to Bill. In this example, the extraneous information module 16 determines that Bill can be offered entertainment. The relationship director 5 selects a corresponding dialog script 12 for offering entertainment to Bill. The dialog script may comprise "Would you like to play a game and have a chance to win free movie tickets?". The relationship director 5 then waits for the user input from Bill. In the example of Fig. 11, Bill responds that he would like to play the game. The relationship director 5 records the user input and determines from the personal data store which, if any, games that Bill has previously played. After determining previous games, the relationship director 5 selects a dialog script for a game that Bill has not yet played. The dialog script 12 may comprise a simple trivia game such as asking "Who was the first president of the United States?". The relationship director 5 waits for the user input from Bill. After a few questions, the relationship director 5 might determine that Bill has won the game and select the corresponding dialog script 12 to inform Bill he has won free movie tickets. The dialog script 12 may comprise "Great job Bill! You have just won two movie tickets. I will know check my user database to determine if I have your correct home mailing address". The relationship director 5 determines whether the required personal data (such as mailing address) is contained in the data store 10 for Bill. If the required personal data is not in the personal data store 10, the relationship director 5 will select a dialog script 12 to obtain the personal data. The dialog script 12 may comprise "Please give me your home address so I can mail the

free movie tickets." The required personal data is then obtained from Pat and saved in the personal data store 10.

The relationship director 5 then may pass a command instruction to the reciprocity module 8 to determine whether items if any are available to be offered to Bill. In this example, the reciprocity module 8 determines that Bill can be offered a coupon. The relationship director 5 as described in Example One may offer Bill a coupon.

As can be noted from the first two examples, the interactive system is at least partially based on a gift/reward type system. Such arrangements have been found to facilitate the collection of valuable information and to stimulate the natural relationship building models to establish the trust, confidence and rapport needed for reliable and honest information exchange. When certain user input has been gathered from the user, the user is rewarded with a gift offer. The gift offers can vary by level and the reciprocity module 8 and the personal data store 10 track which gifts have been offered to and accepted by the user.

EXAMPLE THREE

As depicted in Fig. 12, the relationship director 5 ("Relationship Agent") begins the interaction by welcoming the user to the interactive system. The interactive system is running on a standard computer web server. The web server is connected to the Internet. Mike is using an ordinary computer comprising a CPU and memory. The web server sends all user interaction to the relationship director. The relationship director comprises software running on the web server computer or in communication with the web server computer. Mike connects to the Internet through his Internet Service Provider, or through a local area network (LAN) connected to the Internet, and opens Internet Explorer web browser software on his computer. Mike enters the URL (address) of http://www.mrclean.com. The web browser sends the URL request to the web server computer through the Internet. The web server computer sends a command instruction back to Mike's computer to check for the presence of a cookie corresponding to the interactive system. Finding no cookie, the web server sends a command to the relationship director identifying Mike as a new unknown first time user. The relationship director determines that Mike is at relationship "stage 0" and selects the corresponding introduction dialog script.

The relationship director next sends the dialog script to the web server which incorporates the script into the web page and then the web server sends the web page to Mike through his web browser. Mike acknowledges the welcome and then proceeds to enter an administrative commands such as "sys survey" to change the current survey of the interactive system. The relationship director 5 analyzes the user input and determines that the user input is an administrative command. The relationship director 5 selects a dialog script 12 to authenticate the administrative user. The dialog script may comprise "You must authenticate first.". Mike enters an administrative command such as "sys authenticate" to begin the authentication process. The relationship director 5 analyzes the user input and then selects a dialog script 12 to continue the authentication process. The dialog script may comprise "Please enter your password". Mike enters his password which usually is masked to prevent others in the same area as Mike from seeing his password. The relationship director 5 then checks the personal data store 10 for the password entered by the administrative user to determine if the administrative user has permission to make changes to the interactive system. Finding that Mike is an authorized administrative user, the relationship director 5 selects a dialog script informing Mike that he has been authenticated. The relationship director 5 then waits for user input from Mike. At any time during the interaction with the administrative portion of the interactive system, the administrative user has the ability to ask questions and interact as would a normal user. Mike enters an administrative command to change the current survey of the interactive system. The administrative command may comprise "sys survey". The relationship director 5 receives the administrative command and retrieves from the dialog scripts available surveys that can be presented to the users. The relationship director 5 then displays a list of available surveys to the administrative user and asks Mike which survey he would like to select. Mike selects "survey7" and the relationship director 5 makes the appropriate changes in the algorithms and/or decision trees to utilize "survey7". Mike then enters another administrative command to change the current coupon being offered to users. The administrative command may comprise "sys coupon". The relationship director 5 receives the user input and determines that the user input is an administrative command to change the current coupon. The relationship director 5 sends a command to the reciprocity module to determine which coupons are currently being offered. The reciprocity module 8 determines which coupons are currently being offered and sends a command to the relationship director 5 containing the list of coupons. The relationship director 5 then displays the list of current coupons

to the administrative user Mike and asks Mike if he would like to change the coupon. Mike responds that he would like to change the coupon, and the relationship director asks Mike for a new description for the coupon to be offered. Mike enters the new description of the coupon, such as "75 cents off Large size". The relationship director 5 receives the administrative user input and sends a command to the reciprocity module 8 to change the current coupon to the description entered by the administrative user. The relationship director 5 selects a dialog script 12 to inform the administrative user that the requested changes have been made. The dialog script may comprise "Master, new coupon description is in effect". Mike then enters an administrative command to terminate the administrative session. The administrative command may comprises "sys goodbye". As can be seen, under the present invention, an administrative user can make real-time changes to the interactive system. In addition, these changes can be made virtually anywhere in the world and require no special software other than a standard web browser application and an Internet connection.

The examples and specific embodiments set forth herein are for illustrative purposes only and are not intended to limit the scope of the methods and fabrics of the invention. Additional methods and fabrics within the scope of the claimed invention will be apparent to one of ordinary skill in the art in view of the teachings set forth herein.

WHAT IS CLAIMED IS:

1. An interactive system for transferring information relating to products or services comprising:

a user interface;

a relationship director in communication with a personal data store and the user interface, wherein the relationship director comprises executable instructions for determining a user's current stage in at least part from user information from the personal data store; and

a reciprocity module in communication with the relationship director comprising executable instructions for determining triggers for availability of related items for selective distribution to the user by the relationship director.

2. The system of claim 1, wherein the relationship director is provided with access to one or more pre-determined dialog scripts for directing user interaction.

3. The system of claim 1, wherein the interactive system further comprises executable instructions for selectively providing one or more virtual characters through the user interface.

4. The system of claim 1, wherein the relationship director is part of a management system which comprises executable instructions for supervising and directing the flow of information between and among the relationship director, user interface, and other elements of the interactive system.

5. The system of claim 1, further comprising a technical information director in communication with one or more information data stores, the technical information director comprising executable instructions for providing technical information through the user interface.

6. The system of claim 5, wherein the technical information director is provided with access to technical information in the form of FAQs, product-related tips, product-related technical information, and the like.

7. The system of claim 1, wherein the related items for selective distribution comprise coupons, products and other bonuses.

8. The system of claim 1, wherein the relationship director further comprises a language analyzer comprising executable instructions for determining one or more personality traits of the user based upon user input.

9. The system of claim 8, further comprising one or more pre-determined dialog scripts corresponding to one or more of the determined personality traits.

10. The system of claim 2, wherein the relationship director comprises executable instructions for selecting a pre-determined dialog script corresponding to the user's current stage.

11. The system of claim 1, wherein the reciprocity module comprises executable instructions for selectively implementing pre-determined timing parameters, randomizing parameters and offering conditions.

12. The system of claim 1, wherein the user information comprises data relating to prior interactions through the user interface.

13. The system of claim 1, further comprising an extraneous information module in communication with the relationship director and comprising executable instructions for determining triggers for availability of unrelated items for selective distribution to the user by the relationship director.

14. An interactive system for transferring information relating to products or services comprising:

a user interface;

a relationship director in communication with a personal data store and the user interface, wherein the relationship director comprises executable instructions for determining a user's current stage in at least part from user information from the personal data store; and

an extraneous information module in communication with the relationship director comprising executable instructions for determining triggers for availability of unrelated items for selective distribution to the user by the relationship director.

15. The system of claim 14, wherein the relationship director is provided access to one or more pre-determined dialog scripts for directing user interactions.

16. The system of claim 14, wherein the unrelated items for selective distribution comprise providing the user access to unrelated stimuli.

17. The system of claim 14, wherein the triggers correspond with one or more pre-determined user stages.

18. The system of claim 14, further comprising a reciprocity module in communication with the relationship director and comprising executable instructions for determining triggers for availability of related items for selective distribution to the user by the relationship director.

19. An interactive system for transferring information relating to products or services comprising:

a user interface;

a relationship director in communication with a personal data store and the user interface, wherein the relationship director comprises executable instructions for determining a user's current stage;

a reciprocity module in communication with the relationship director comprising executable instructions for determining triggers for availability of related items for selective distribution to the user by the relationship director; and

an extraneous information module in communication with the relationship director comprising executable instructions for determining triggers for availability of unrelated items for selective distribution to the user by the relationship director.

20. The system of claim 19, wherein the relationship director directs user interaction through one or more pre-determined dialog scripts.

21. A method for interactive collection and distribution of information relating to products and services, comprising:

providing a user interface, a relationship director in communication with a personal data store and the user interface, wherein the relationship director comprises executable instructions for determining a user's current stage, and a reciprocity module in communication with the relationship director and comprising executable instructions for determining triggers for availability of related items for selective distribution to the user by the relationship director;

interacting with the user using a dialog script;

recording user input in a personal data store;

determining a user's current stage corresponding at least in part to the user input;

selecting a further dialog script corresponding to the user's current stage;

periodically offering to the user an available related item following trigger determination; and

repeating the foregoing steps until user termination.

22. The method of claim 21, further comprising the steps of:

providing an extraneous information module in communication with the relationship director comprising executable instructions for determining triggers for availability of unrelated items for selective distribution to the user by the relationship director; and

periodically offering to the user an available unrelated item following trigger determination.

23. The method of claim 21, further comprising the step of accessing the user input in the personal data store for product development or improvement of products and services.

24. A method for interactive collection and distribution of information relating to products and services, comprising:

providing a user interface, a relationship director in communication with a personal data store and the user interface, wherein the relationship director comprises executable instructions for determining a user's current stage, and an extraneous information module in communication with the relationship director and comprising

executable instructions for determining triggers for availability of unrelated items for selective distribution to the user by the relationship director;

interacting with the user using a dialog script;

recording user input in a personal data store;

determining a user's current stage corresponding to the user input;

selecting a further dialog script corresponding to the user's current stage;

periodically offering to the user an available unrelated item following trigger determination; and

repeating the foregoing steps until user termination.

25. The method of claim 24, further comprising the steps of:

providing a reciprocity module in communication with the relationship director comprising executable instructions for determining triggers for availability of related items for selective distribution to the user by the relationship director; and

periodically offering to the user an available related item following trigger determination.

26. A method for product development, comprising the steps of:

accessing a personal data store comprising user input gathered by the method of claim 21; and

utilizing the user input for product development or improvement of products and services of an enterprise.

27. A method for product development, comprising the steps of:

accessing a personal data store comprising user input gather by the method of the following steps:

interacting with a user using a dialog script;

recording user input in a personal data store;

selecting a further dialog script corresponding to the user input; and

periodically offering to the user an item following trigger determination; and

utilizing the user input in the personal data store for product development or improvement of products and services of an enterprise.

28. A computer-readable medium containing instructions for controlling a computer system to interact with a user for interactive collection and distribution of information relating to products and services, comprising the steps of:

interacting with the user using a dialog script;

recording user input in a personal data store;

determining the user's current stage corresponding to the user input;

selecting a further dialog script corresponding to the user's current stage;

determining triggers for availability of related items;

periodically offering to the user an available related item following trigger determination; and

repeating the foregoing steps until user termination.

29. A network-based method for interactive collection and distribution of information relating to products and services, comprising the steps of:

providing a web site having a user interface;

receiving at the user interface one or more items of user input from a user;

recording the user input in a personal data store;

determining a user's current stage from the user input;

selecting a further dialog script corresponding to the user's current stage;

periodically offering to the user an available unrelated item through the user interface; and

repeating the foregoing steps until user termination.

30. The method of claim 21, further comprising the step of providing others with access to data from the personal data store.

31. The method of claim 30, wherein the step of providing other with access comprises analyzing at least portions of the personal data store to identify information of interest.

32. A computer data signal embedded in a carrier wave for transmitting executable instructions for the interactive collection and distribution of information relating to products and services, the signal comprising the instructions:

interacting with the user using a dialog script;

recording user input in a personal data store;

determining the user's current stage corresponding to the user input;

selecting a further dialog script corresponding to the user's current stage;

determining triggers for availability of related items;

periodically offering to the user an available related item following trigger determination; and

repeating the foregoing steps until user termination.

33. A method of using a user interface for the interactive collection and distribution of information relating to products and services, comprising the steps of:

interacting with the user using a dialog script;

recording user input in a personal data store;

determining the user's current stage corresponding to the user input;

selecting a further dialog script corresponding to the user's current stage;

determining triggers for availability of related items;

periodically offering to the user an available related item following trigger determination; and

repeating the foregoing steps until user termination.

34. A computer readable medium containing one or more pieces of user input from a personal data store gathered from the method of claim 21.

35. A propagated data signal embedded in a carrier wave for accessing information over a network, the signal comprising one or more pieces of user input from a personal data store gathered from the method of claim 21.

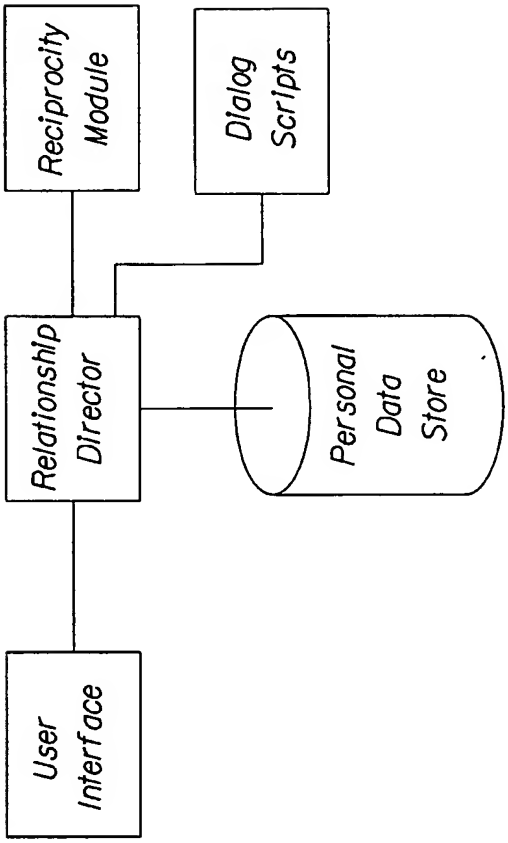
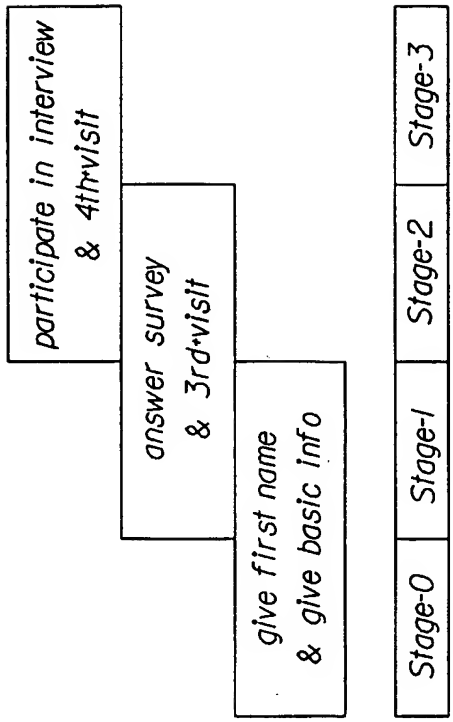

Reciprocity Module
Dialog Scripts
Relationship Director
Personal Data Store
User Interface

Fig. 1



Relationship stage:	Stage-0	Stage-1	Stage-2	Stage-3	etc.
Gifts to user					
Chit chat problem solving tips	X X X	X X X	X X X	X X X	
Coupon		X	X	X	
E-mailed tips premium 1			X X	X X	
Samples premium 2				X X	
Premium 3 to be determined					

Fig. 2

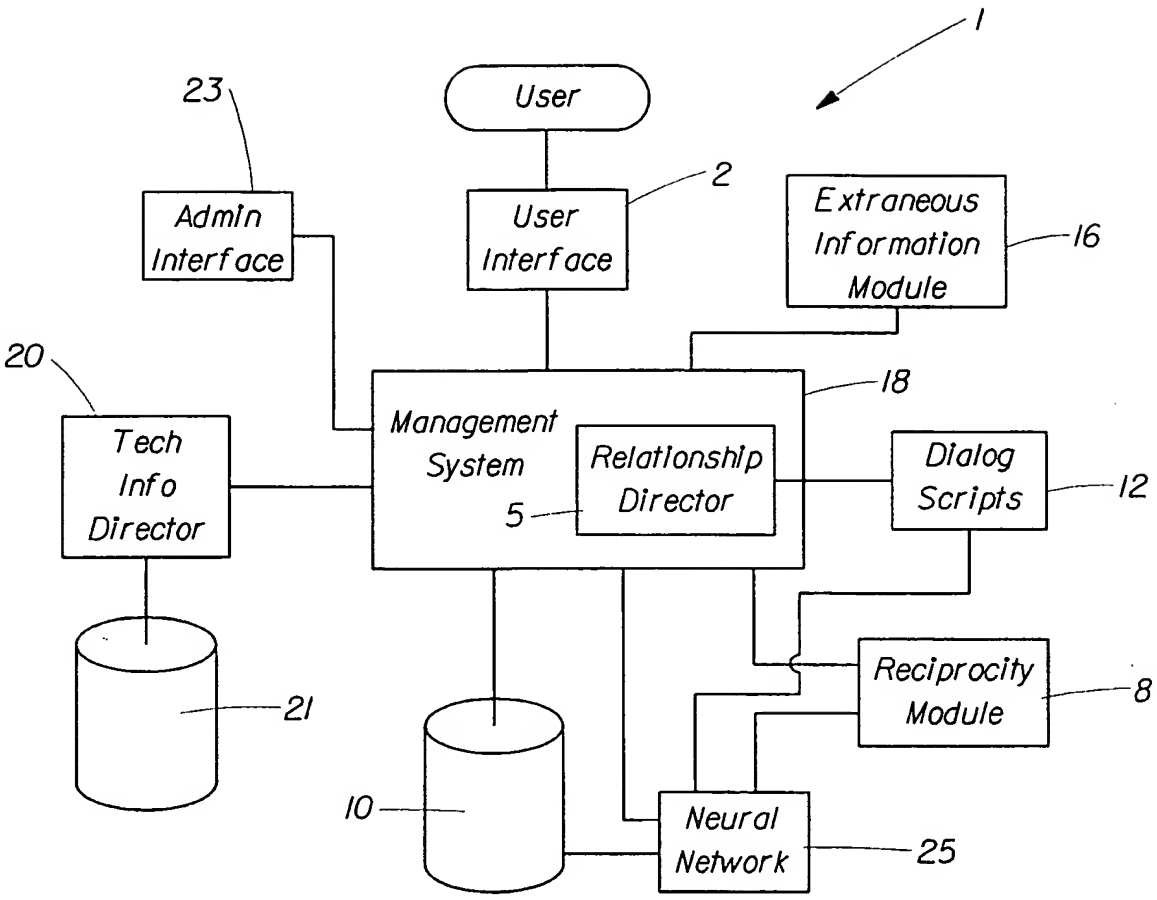

1
User
23
Admin Interface
User Interface
2
Extraneous Information Module
16
20
18
Tech Info Director
Management System
Relationship Director
5
Dialog Scripts
12
Reciprocity Module
8
21
10
Neural Network
25

Fig. 3

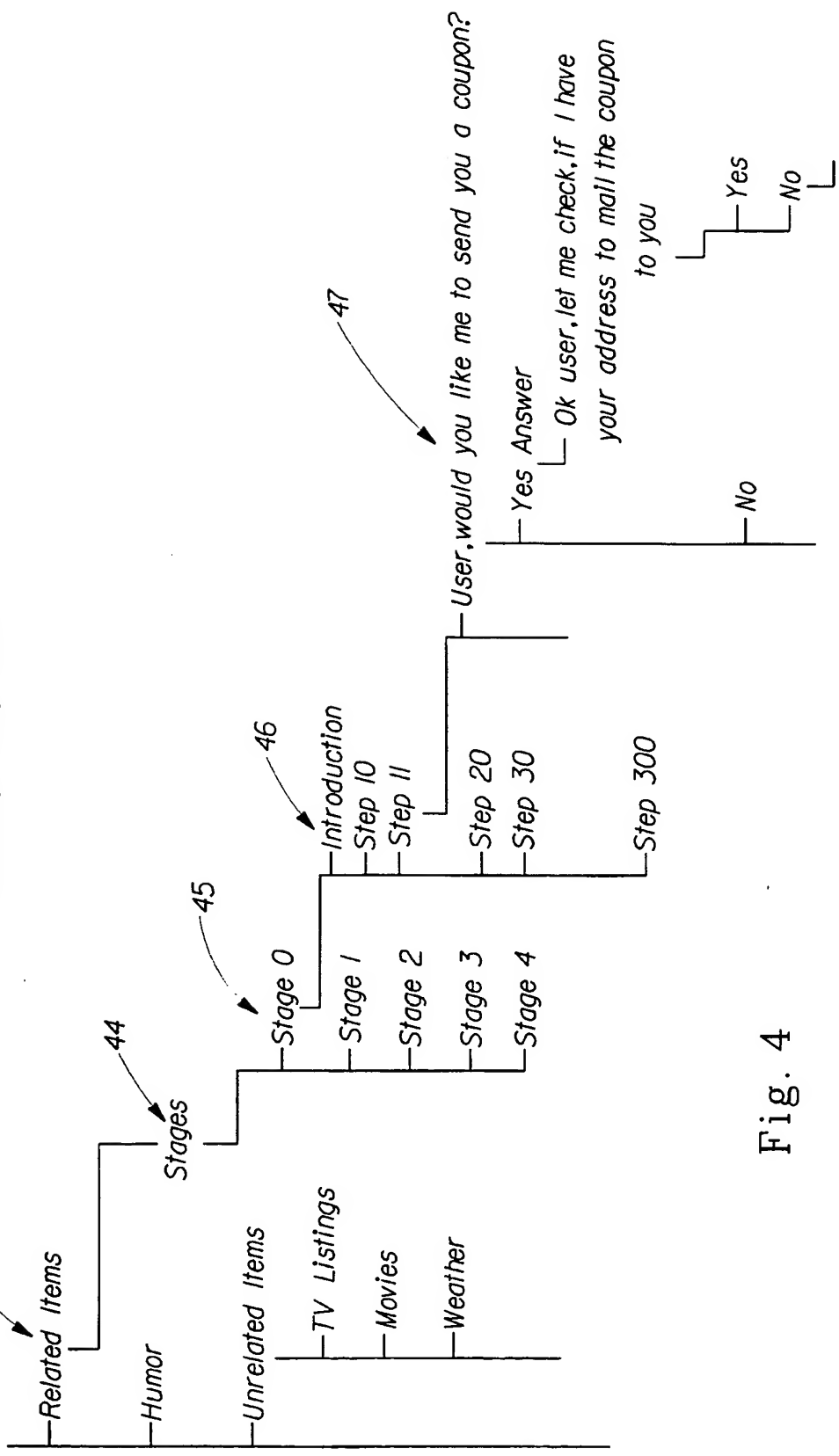
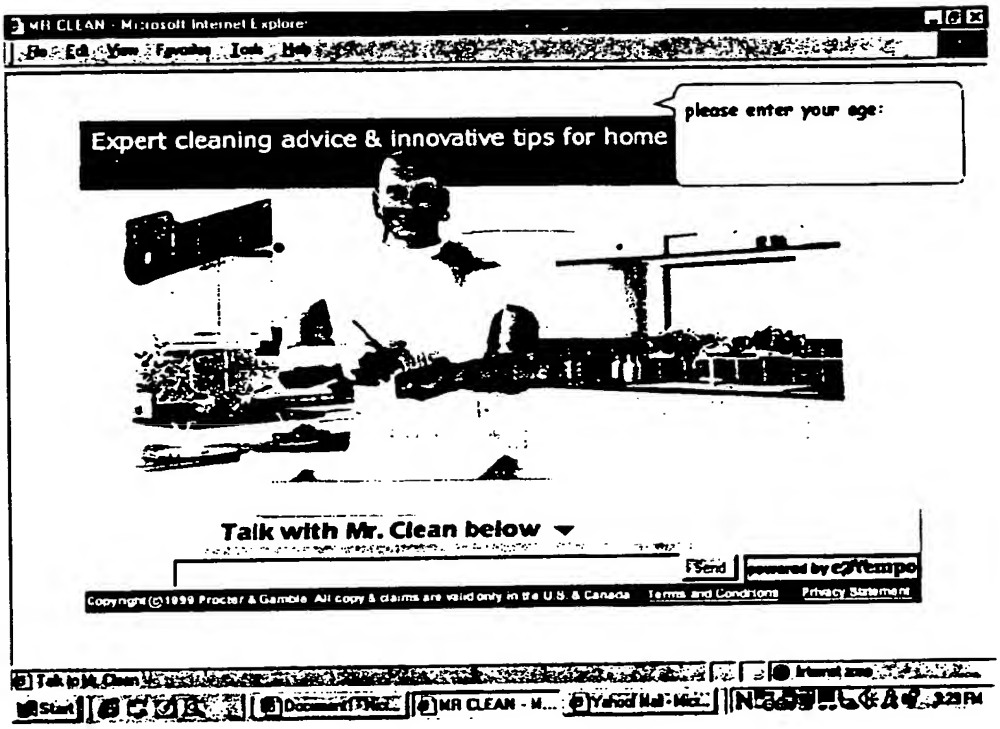

Exemplary Dialog Script
43
Related Items
Humor
Unrelated Items
TV Listings
Movies
Weather
44
Stages
45
Stage 0
Stage 1
Stage 2
Stage 3
Stage 4
46
Introduction
Step 10
Step 11
Step 20
Step 30
Step 300
47
User, would you like me to send you a coupon?
Yes Answer
Ok user, let me check, if I have your address to mail the coupon to you
No
Yes
No

Fig. 4


MR CLEAN - Microsoft Internet Explorer
Expert cleaning advice & innovative tips for home
please enter your age:
Talk with Mr. Clean below
Send
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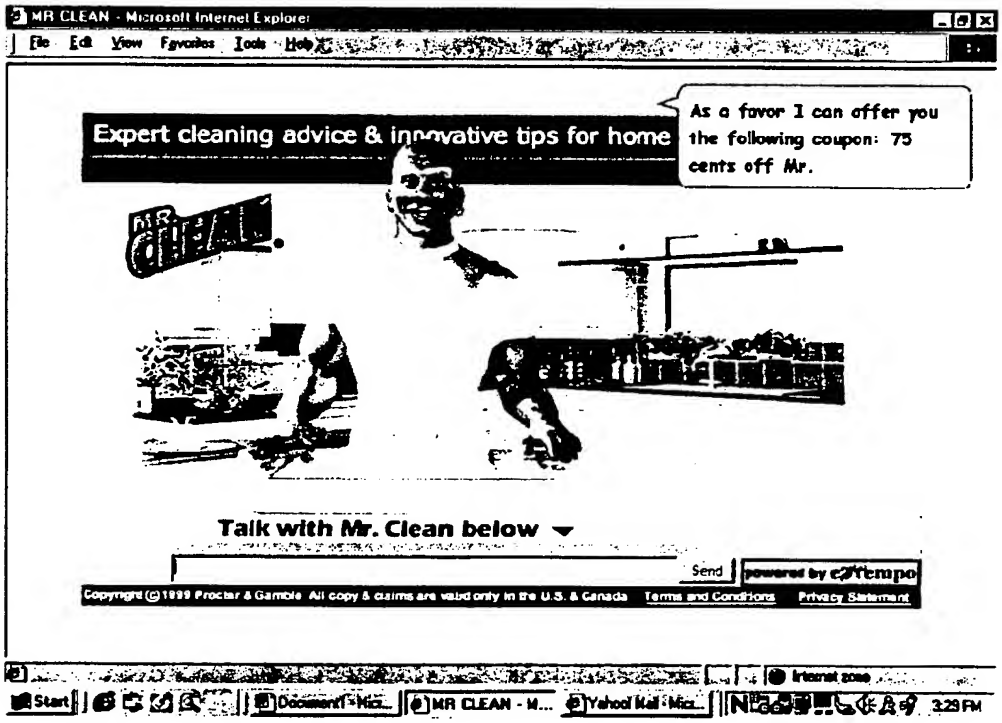
Privacy Statement
Start
MR CLEAN - M...
3:23 PM

Fig. 5


MR CLEAN - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Expert cleaning advice & innovative tips for home
As a favor I can offer you the following coupon: 75 cents off Mr.
Talk with Mr. Clean below
Send
powered by extempo
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Start
MR CLEAN - M...
Yahoo! Mail - Mic...
3:29 PM

Fig. 6

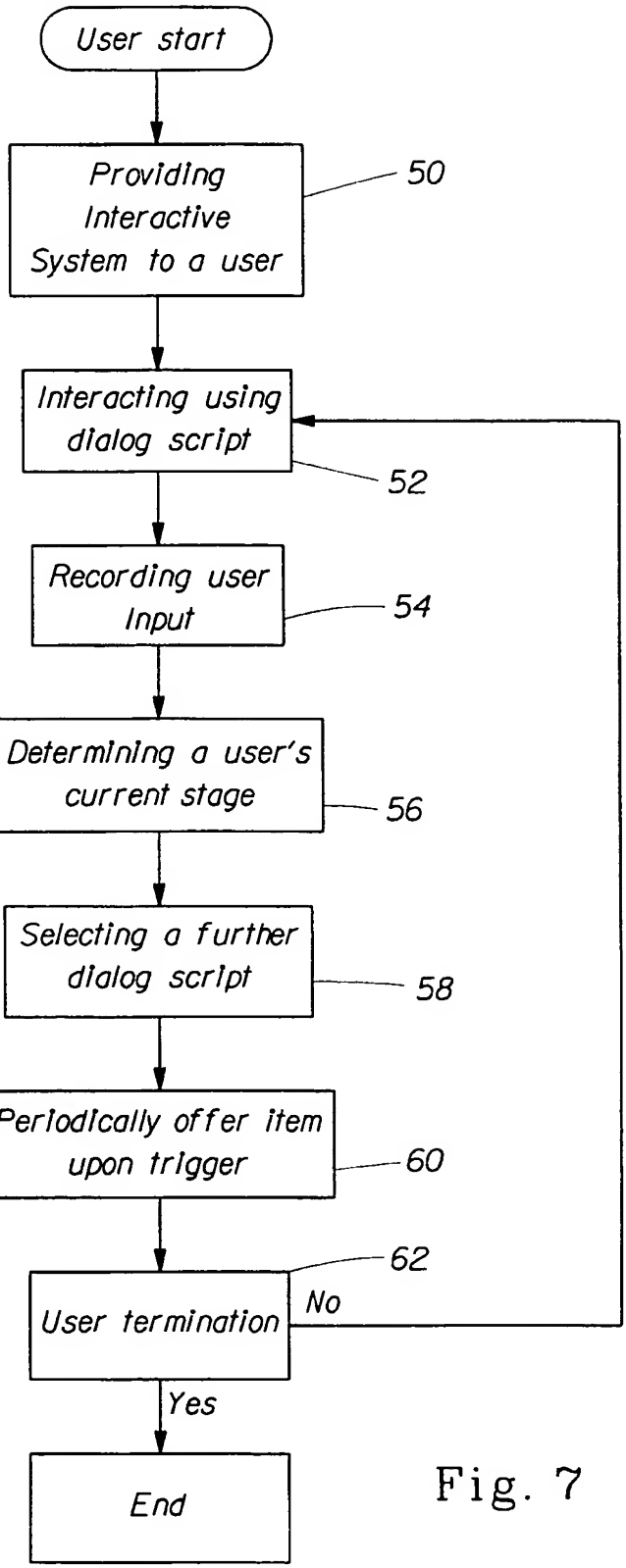
User start
Providing Interactive System to a user
50
Interacting using dialog script
52
Recording user Input
54
Determining a user's current stage
56
Selecting a further dialog script
58
Periodically offer item upon trigger
60
62
User termination
No
Yes
End

Fig. 7

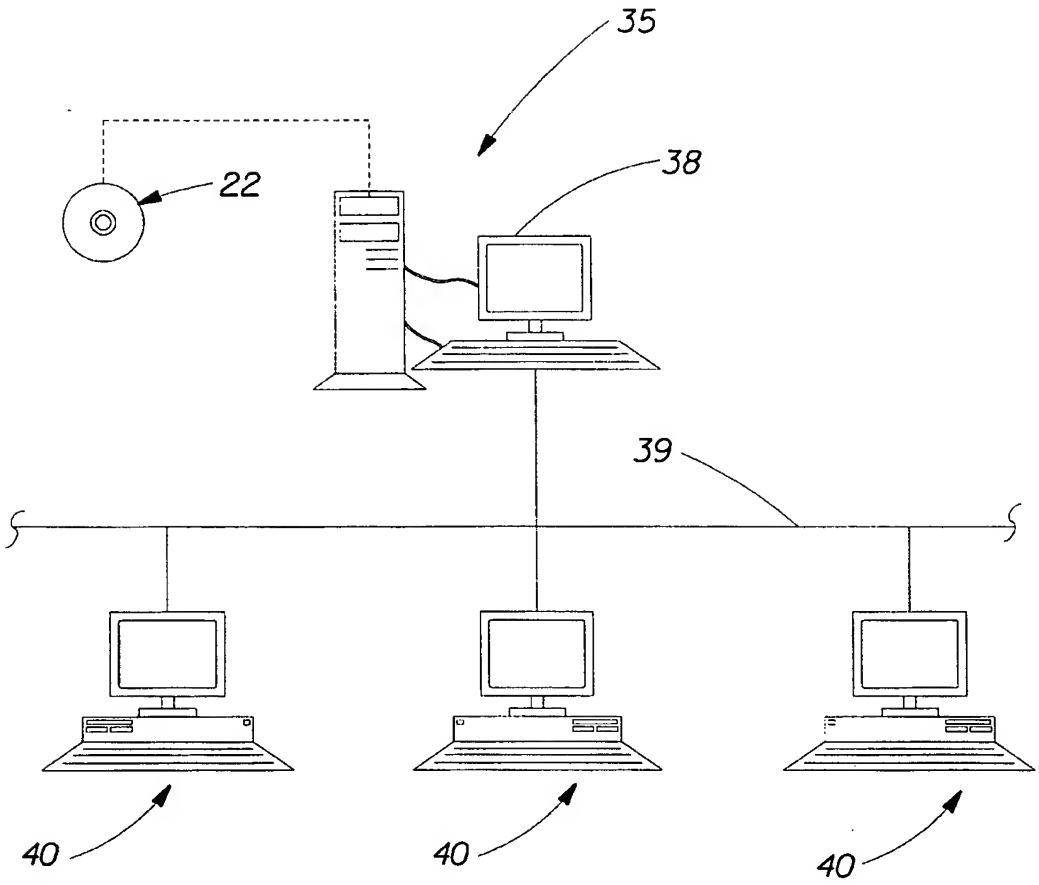

Fig. 8

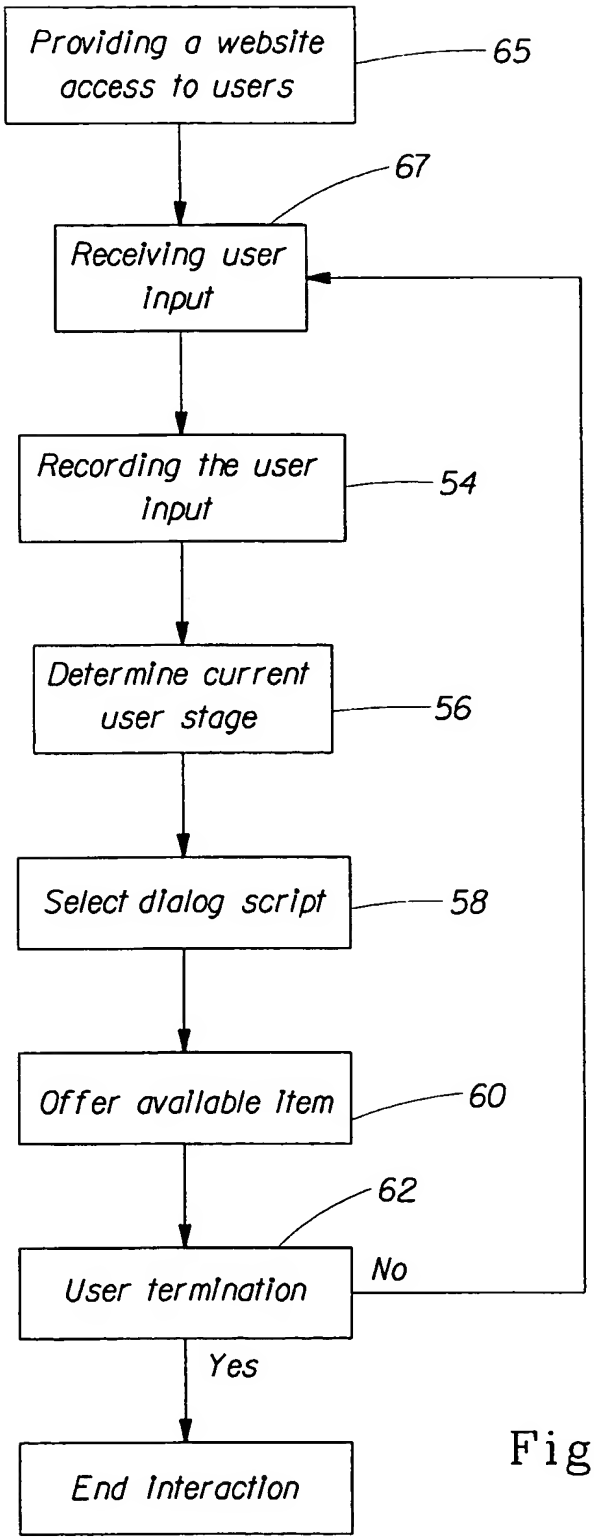
Providing a website access to users
65
67
Receiving user input
Recording the user input
54
Determine current user stage
56
Select dialog script
58
Offer available item
60
62
User termination
No
Yes
End interaction

Fig. 9

Dialog

Notes	Relationship Agent	User-1 "Pat"
first encounter	Hello, and welcome.....	hi
		hkow can I get ink stains off my tablecloth?
Info agent	Try using this process with bleach... etc.	
request	What's your first name?	Pat
	Would you give me some basic demographic data?	ok
	1. What is your zip code?	45211
	2. What is your age?	34
	3. What is your gender?	F
next stage	Thanks very much!	
reward	Would you like a coupon?	sure!
personalized	Ok, Pat, I'll send one out! Please give me your address...	Ms. Pat Johnson...
request	Would you take a survey please?	ok
	1. Do you have pets?	yes
	2. Do you have a dishwasher?	no
	3. What detergent do you use?	Tide
next stage	Thanks, we're done with the survey!	
		Is product-X safe for the environment?
	Yes, and it's biodegradeable, too.	
reward	Pat, would you like a free sample?	yes.
personalized	Ok, I have your address already....	
	etc.....	etc....

Fig. 10

Dialog

Notes	Relationship Agent	User-2 "Bill"
first encountger	Hello, and welcome...	hi.
		how can I get ink stains off my tablecloth?
Info agent	try using this process with bleach...etc...	...etc...
	What's your first name?	Bill
request	Would you give me some basic demographic data?	
refusal		no, not now
	ok, fine.	
		Can you tell me how to clean grout?
	Sure...try this technique...	ok
		bye
	So long, Bill. Good to meet you.	
	---later, another day---	
revisit	Hi, Bill! Good to see you again... ...etc...	...etc...
request	Would you give me some basic demographic data?	ok
		yes
	1. What is your Zip code?	30321
	2. What is your age?	26
	3. What is your gender?	M
next stage	thanks very much!	
reward	would you like to play a game?	yes
personalized	Bill, you just won 2 movie tickets please give me your address ...ect...	Mr. Bill Smith... ...ect...

Fig. 11

Dialog

Notes	Relationship Agent	Administrator ("Mike")
	Hello, and welcome...	hi
	Tell me your cleaning problem	sys survey
(security)	You must authenticate first enter password	sys authenticate ********(masked)
Admin mode	Thank you, master. You are authenticated. available surveys are survey4 survey7, and survey 12...	sys survey
revision	which do you want?	survey7
Immediate effect	Master, survey7 is now in effect.	
	current coupon description is.... "50 cents off any size", change it?	Sys coupon yes
revision	enter new description	75 cents off Large size
Immediate effect	Master, new coupon description is in effect	

Fig. 12

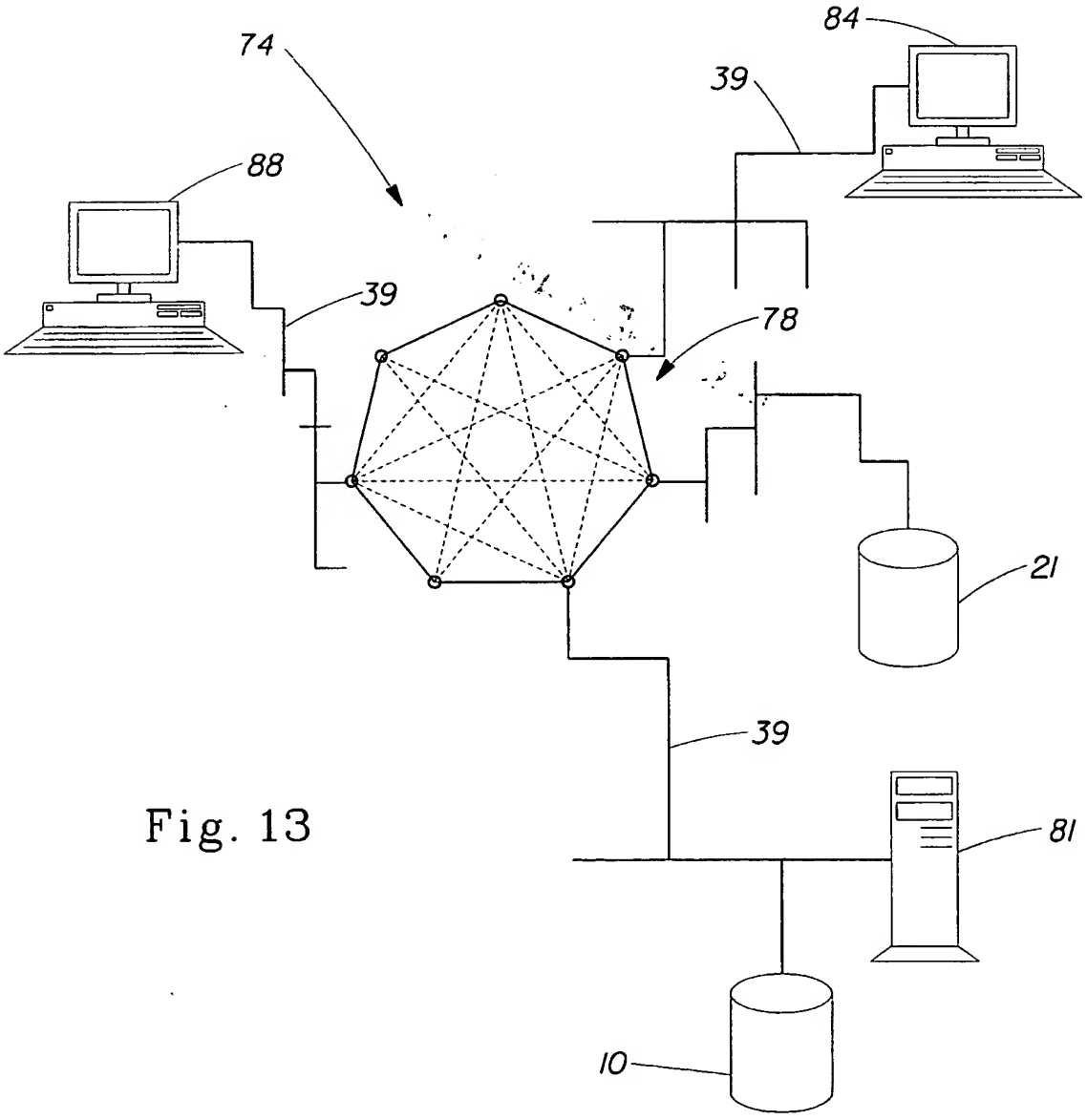

Fig. 13

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